

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of cleaning at least one surface ~~(10)~~ of an optical device ~~(14)~~ disposed in a vacuum chamber ~~(12)~~, which device is at least partially contaminated by ~~atoms and/or ions (20) of metalloid and/or metal contaminants~~ introduced by a radiation source, ~~(18) generating, in particular, extreme ultraviolet radiation and/or soft X-rays (16), characterized in that~~ the method comprising the act of:

adjusting at least one of a temperature prevailing on the at least one surface (10) and/or and a pressure in the vacuum chamber (12) is adjusted such that the atoms and/or ions (20) contaminants hitting the at least one surface (10) can are removed from a desired portion of-on said at least one surface.

2. (Currently Amended) A The method as claimed in claim 1,
~~characterized in that wherein~~ the temperature of the at least one
surface ~~(10)~~ is set in a range from around 200°C to around 600°C.

3. (Currently Amended) A The method as claimed in claim 1,
~~characterized in that at least further comprising the act of at~~
least one of heating and cooling the at least one surface (10) of
the optical device ~~(14) is heated or cooled.~~

4. (Currently Amended) A The method as claimed in claim 1,
~~characterized in that the atoms and/or ions (20) that can move on~~
~~the surface (10) are halted and collected~~ further comprising the
act of collecting the contaminants at at least one obstacle-(22)
~~whose positioning can be predetermined~~ located at a desired
position.

5. (Currently Amended) A The method as claimed in claim 4,
~~characterized in that wherein~~ the obstacle ~~(22)~~ is at least one of

an elevation ~~(24) or~~ and a recess ~~(26)~~.

6. (Currently Amended) ~~A~~ The method as claimed in claim 5,
~~characterized in that wherein a shape of the elevation (24) takes,~~
~~for example,~~ has at least one of a strip-like, a cylindrical or
and a peg-like shape.

7. (Currently Amended) ~~A~~ The method as claimed in claim 5,
~~characterized in that wherein the elevation (24) is arranged so as~~
~~to run approximately or fully parallel with the rays (16) emitted~~
from the radiation source along the at least one surface (10).

8. (Currently Amended) ~~A~~ The method as claimed in claim 5,
~~characterized in that wherein the elevation (24) is produced from,~~
~~for example,~~ includes at least one of copper, nickel or a and
different further material promoting the configured to promote
formation of accumulations (34) of the contaminants.

9. (Currently Amended) ~~A~~ The method as claimed in claim 5,

~~characterized in that wherein~~ the elevation (24) is applied to the
at least one surface (10) of the optical device (14) by, ~~for~~
~~example,~~ a CVD process.

10. (Currently Amended) ~~A~~ The method as claimed in claim 5,
~~characterized in that wherein~~ the recess (26) ~~takes the form~~
includes at least one of a slot, a or groove or is executed as and
a hole.

11. (Currently Amended) ~~A~~ The method as claimed in claim 5,
~~characterized in that wherein~~ the recess (26) is produced by, ~~for~~
~~example,~~ at least one of a photochemical process or by and a laser
treatment.

12. (Currently Amended) ~~A~~ The method as claimed in claim 5,
~~characterized in that wherein~~ a distance (28) in a range from a few
 μm to roughly one millimeter exists between the elevations (24)
and/or recesses (26) elevation and the recess.

13. (Currently Amended) A The method as claimed in claim 1,
~~characterized in that wherein the atoms and/or ions (20)~~
~~accumulated at the obstacle (28) contaminants~~ are removed from the
~~at least one surface (10) of the optical device (14), e.g. by a~~
chemical process.

14. (Currently Amended) A The method as claimed in claim 1,
~~characterized in that wherein the at least one surface (10) is~~
provided with a coating.

15. (Currently Amended) A The method as claimed in claim 14,
~~characterized in that wherein the coating is executed with a layer~~
thickness of up to approximately 0.5 nm.

16. (Currently Amended) An appliance for cleaning at least one
surface ~~(10)~~ of an optical device ~~(14)~~ disposed in a vacuum chamber
~~(12)~~, which device is at least partially contaminated by ~~atoms~~
~~and/or ions (20) of metalloids and/or metal contaminants~~ introduced
by a radiation source ~~(18) generating, in particular, extreme~~

PATENT

Serial No. 10/566,963

Amendment in Reply to Office Action of November 1, 2006

And Notice of Abandonment of May 10, 2007

~~ultraviolet radiation and/or soft X-rays (16), characterized in~~
~~that, the appliance comprising at least one control device~~
~~configured to adjust at least one a temperature prevailing on the~~
~~at least one surface (10) and/or and a pressure in the vacuum~~
~~chamber (12) is adjustable by means of control devices (30, 32)~~
~~such that the atoms and/or ions (20) contaminants hitting the at~~
~~least one surface (10) can move on are removed from a desired~~
~~portion of said at least one surface.~~

17. (Currently Amended) ~~An~~ The appliance as claimed in claim
16, ~~characterized in that wherein the temperature of the at least~~
~~one surface (10) is adjustable over a range from around 200°C to~~
~~around 600°C.~~

18. (Currently Amended) ~~An~~ The appliance as claimed in claim
16, ~~characterized in that at least wherein the at least one control~~
~~device is further configured to at least one heat and cool the at~~
~~least one surface (10) of the optical device (14) can be heated or~~
~~cooled.~~

19. (Currently Amended) ~~An~~ The appliance as claimed in claim 16, ~~characterized by further comprising~~ at least one obstacle (22), with predetermined positioning on the at least one surface (10), for ~~halting and collecting the atoms and/or ions~~ (20) contaminants.

20. (Currently Amended) ~~An~~ The appliance as claimed in claim 19, ~~characterized in that wherein~~ the at least one obstacle (22) is includes at least one of an elevation (24) ~~or and~~ a recess (26).

21. (Currently Amended) ~~An~~ The appliance as claimed in claim 20, ~~characterized in that wherein~~ the elevation (24) ~~takes, for example, has~~ at least one of a strip-like, a cylindrical or and a peg-like shape.

22. (Currently Amended) ~~An~~ The appliance as claimed in claim 20, ~~characterized in that wherein~~ the elevation (24) is arranged so as to run approximately or fully parallel with the rays (16) emitted from the radiation source along the at least one surface

~~(10).~~

23. (Currently Amended) ~~An~~ The appliance as claimed in claim 20, ~~characterized in that wherein the elevation (24) is produced from, for example, includes at least one of copper, nickel or a different and further material promoting the configured to promote formation of accumulations (34).~~

24. (Currently Amended) ~~An~~ The appliance as claimed in claim 20, ~~characterized in that wherein the elevation (24) is applied to the at least one surface (10) of the optical device (14) by, for example,~~ a CVD process.

25. (Currently Amended) ~~An~~ The appliance as claimed in claim 20, ~~characterized in that wherein the recess (26) takes the form includes at least one of a slot, a or groove or is executed as and~~ a hole.

26. (Currently Amended) ~~An~~ The appliance as claimed in claim

20, ~~characterized in that wherein~~ the recess (26) is produced by,
~~for example, at least one of a photochemical process or by and a~~
laser treatment.

27. (Currently Amended) ~~An~~ The appliance as claimed in claim
20, ~~characterized in that wherein~~ a distance (28) in a range from a
few μm to roughly one millimeter exists between the ~~elevations (24)~~
~~and/or recesses (26)~~ elevation and the recess.

28. (Currently Amended) ~~An~~ The appliance as claimed in claim
16, ~~characterized in that wherein~~ the atoms and/or ions (20)
~~accumulated at the obstacle (22) can be~~ contaminants are removed
from the at least one surface (10) of the optical device (14), ~~e.g.~~
by a chemical process.

29. (Currently Amended) ~~An~~ The appliance as claimed in claim
16, ~~characterized in that wherein~~ the at least one surface (10) is
provided with a coating.

30. (Currently Amended) ~~An~~ The appliance as claimed in claim
29, ~~characterized in that wherein~~ the coating is up to
approximately 0.5 nm thick.

31. (New) A device for keeping a surface clean from
contaminants disposed in a chamber comprising:

at least one obstacle formed on the surface; and

a controller configured to adjust at least one of a temperature
of the surface and a pressure in the chamber such that the
contaminants are moved toward the at least one obstacle.

32. (New) The device of claim 31, wherein the at least one
obstacle includes at least one of an elevation and a recess of the
surface.